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ABSTRACT

Designed for community college educators, this paper provides an overview of the characteristics and problems of the learning disabled adult and offers strategies for both teaching and learning. Following introductory remarks, the paper provides definitions of learning disability and discusses the symptoms, psychological effects, and incidence of learning disabilities. The implications of learning disabilities for the workplace are discussed next, followed by a glossary of relevant terms (e.g., sensory, perception, and attention) and types of disabilities (e.g., aphasia, dyslexia, and anomia). The next sections look at the objectives, fears, and behaviors of the learning disabled student at the community college and consider the demands on students with which the disabled adult may have difficulty (e.g., orientation, acquiring information, expression of knowledge, and time management). A section on teaching strategies points to the helpfulness of accommodations such as textbooks on tape, notetakers for lectures, alternative exam procedures, carefully written syllabi, cueing and pre-organizing in lectures, alternate presentation styles, and tension reduction. Finally, a series of learning strategies for the disabled student is offered, focusing on understanding one's learning style, keeping healthy, using accommodations provided, active listening and reading skills, and time management. (LAL)

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LEARNING DISABILITIES:
INTRODUCTION AND STRATEGIES FOR COLLEGE TEACHING

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LEARNING DISABILITIES:
Introduction and Strategies
for College Teaching

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Introduction

All students have individual learning styles that affect their ability to benefit from community college instruction and the community college environment. Each learning style is derived from a person's intellectual (cognitive), emotional, (affective) and bodily approach to the world and is modified by experience. Learning style describes the "how" of learning, not the "how much", and is therefore not synonymous with academic ability. Most students are able to adapt to the learning process demanded at a community college, given adequate motivation and ability.

However, the performance of some students does not match their intellectual potential and motivation for learning, because deficits in information processing interfere with their ability to meet academic demands. Such deficits may have interfered with the student's mastery of reading, writing, and math. They may perceive information in untrustworthy, inconsistent fashion; may have difficulty holding information in short-term memory or integrating parts with the whole.

In addition, students with perceptual problems may misperceive social cues, facial expressions, or gestures. They may be unaware of personal space violations or inappropriate voice tone. These social skill difficulties exacerbate the sense of isolation of such students.

Learning disorders are no respecter of intelligence. So, there are many students with appropriately high academic and career aspirations who find themselves frustrated by the absence or unreliability of lower-level skills. These are students who can reason, but can't read; manage an office, but can't take a phone message; argue a point orally, but can barely write a legible sentence. This concerns us as educators in our

effort to encourage learning, but even more widely, because it is a waste of human life, a loss of talent and fulfillment.

There are many examples of famous and talented people with learning disorders. Hans Christian Anderson couldn't read and had to dictate his stories to a scribe. Leonardo Da Vinci wrote backwards: there are reversals within the reversals. Nelson Rockefeller was dyslexic and memorized all his speeches. Albert Einstein failed math and was thought to be retarded.

Einstein himself pointed out that his learning difficulties may have contributed to the uniqueness of his vision, in that he applied childlike inquiry to mature areas of thought. Throughout his life, he considered himself clumsy with words, painfully translating ideas into verbal form. It is a reminder that divergent thinking and strange perceptions, while often unproductive, are sometimes brilliantly creative. Learning disabled students often can master the conventional insights of a field using alternative methods. They may develop new insights, offering a resource to us all.

Learning Disability: What is it?

Public Law 94-142 states: "The term..means.. a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in imperfect ability to listen, speak, read, write, spell or do mathematical calculations. Such disorders include such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia and developmental aphasia. This term does not include..learning problems which are primarily the result of visual, hearing or motor handicaps, of mental retardation, of emotional disturbance, or of environmental disadvantage."

Charles Orton, early in this century, was the first to identify children of high or average intelligence who were unable to read; he coined the term "strephosymbolia" to describe the twisted confusion of symbols these children experienced. His work of 1937 is still the classic source for remedial training of dyslexics. However, the field has expanded to include other skill deficits, such as dyscalculia (inability to do math), dysgraphia (disordered writing) and dysphasia (disordered language); as well as difficulties with visual perception, auditory perception, and disturbances of touch, time and space orientation.

Over the years, experts have battled over the definitions of learning disabilities, arguing about nomenclature, factors to include, underlying causes. Generally, definitions are functional (the individual is experiencing difficulty in learning a socially valued task) and exclusive (other likely causes of difficulty are ruled out). There is no simple physical or psychological substrate, no straightforward test or proof. Also it is certainly possible to be physically handicapped and learning disabled, or any combination of disorders and disadvantages.

Learning disabled persons are assumed to have normal or better reasoning and understanding: for the content of learning is intact. However, the processes of acquiring, retrieving and expressing information are unreliable. LD students show inconsistency of performance and a discrepancy between expectation and achievement.

Symptoms of Learning Disability: What does it feel like?

All people have strengths and weaknesses in learning, and develop skills at differing rates. The experiences the learning disabled report are not unfamiliar to all of us. Some examples:

I couldn't concentrate.

I missed the directions.

I'm just hopeless with maps.

I can't think of the word I want.

I tripped over my own tongue.

They were just silly mistakes (of spelling or arithmetic).

I did read it, but I don't seem to remember it.

I can't get organized.

I was fine for a while, but then there was too much confusion.

Phone messages just come too fast.

Everyone has similar experiences to these at times, such as when very tired, learning a new language, traveling abroad, or under great stress. The difference for the learning disabled adults is the severity and cluster of symptoms. Dale Brown, director of the National Association of Learning Disabled Adults, reports, "The worst cross we have to bear is that learning disabilities get confused with personal weaknesses. You see, no one has perfect perception all the time. If you're upset and pre-occupied and don't see your car keys in plain sight on the desk when you're looking for them, that's a temporary learning disability. Because you can concentrate harder and get it under control, you're liable to think the person with a learning disability is 'just not trying'."¹

On the contrary, learning disabled persons often expend extraordinary effort for meager results. An executive secretary, struggling with an unidentified dyslexia, routinely worked 16 hours a day, to compensate for her inefficiencies in basic skills and correct her many spelling errors. The result was early burn-out, mental and emotional exhaustion. And honesty was no help: her statement, "I can't spell," was met with disbelief, "Of course you can spell. You've been working so hard, anyone would make a mistake." Apparently a person with top management ability could not be lacking basic skills.

This is an unfortunately typical experience of the learning disabled. Since the handicap is invisible, no allowance is made for it. Children are accused of not trying, laziness, losing interest, being rebellious. Learning disabled adults are considered personally at fault for their errors or, as above, circumstances are blamed. "Coming out of the closet" may result in ridicule, disbelief, even demotion. Unlike the blind or physically handicapped, learning disabled adults rarely receive praise and admiration for accomplishment after long effort.

Learning disabled students are concerned about the suspicion of malingering and often choose to forego help or special allowances. The experience of a learning difficulty is in itself confusing, because of its inconsistency. The b's and d's are not always reversed, the phone messages not consistently scrambled and an essay is occasionally well-written. Students are likely to hear, "I knew you could do it if you tried. Enough of this fuss about having trouble." Yet the best instruction will not eliminate times of misperception and disordered learning; students come to believe that success is a fluke and failure is ultimately inevitable.

This can result in lowered self-esteem and despair far beyond an objective assessment of the learning difficulties. Anxiety and reduced self-confidence are poor pre-conditions for successful learning.

Learning disabled students may become rigid and inflexible in the effort to gain control over a shifting and unpredictable world. They may work on details and be unable to see the whole; they may have formula techniques for completing work, techniques that are inadequate but familiar.

Some learning disabled adults are lost in time and space. Unable to plan, anticipate or estimate time requirements, those students are often late or miss things completely. A person who is disoriented in space is likely to lose objects, lose his way around and have difficulty organizing assignments.

Growing up with learning disabilities can be devastating. Feeling dumb and inadequate, yet without any way to understand what is happening, the learning disabled child is a "stranger in a strange land." People are correcting and criticizing every action; it seems that life is a series of mistakes, all totaling personal disaster. Even success in sports, art or with friends doesn't erase the suspicion that something is drastically wrong: perhaps retardation or a progressive brain disease.

And there is no escape. Day after day, month after month, for 12 or more years, the experience of frustration, inadequacy, ridicule. Small wonder that many learning disabled adults have learned to cover up, or have developed compensating specialties, such as clowning or compulsive alternative achievement. For the disabled, the decision to obtain special help or continue with education is often an act of great personal courage.

Incidence of Learning Disabilities: Who has it and why?

Estimates of the distribution of learning disabilities vary with the definitions being used. The severely disabled, carefully separated from all other handicaps, may represent only 2-3% of the population. Other figures range as high as 20% of the school-age population, especially if the group of children labeled underachievers, discipline problems and dropouts is examined more closely for learning difficulties. At a community college, the aggregate of students disabled in a basic skill, perceptually handicapped or inefficient learners, disadvantaged or school-damaged students may reach 30%.

As to causes, learning disabilities is not a disease, it is not pathological. Learning involves the central nervous system (CNS) and anything which effects the functioning of the CNS before birth or in the very young child may later result in learning difficulties. Birth histories may mention difficult pregnancy, rubella, drugs and alcohol use, difficult delivery, oxygen deprivation during delivery, high fever in infancy, meningitis or encephalitis, a fall or accident. The list is endless and the connections uncertain. There is no way to see or test the specific brain functions involved in actually learning the myriad skills humans acquire, from reading to whistling to hitting a golf ball. It could well be that most people experience some insult to central nervous system functioning, while it is only those who have severe difficulties or struggle in academic areas who are identified as "different".

It doesn't surprise us that musically or athletically gifted persons usually have a family connection of talent. Even beyond the training and exposure factor, physical coordination or artistic potential show

some genetic distribution. Learning disorders also run in families, the most extensively documented being dyslexia. Unfortunately for non-readers, the inability to master this technical skill is treated as a major failing, whereas the inability to sing well may cause no more than passing embarrassment or regret.

Learning disabilities seem to be increasing. Certainly more are being identified in children, and older adults are re-examining their own unsatisfactory school performance in light of new information. Very premature and low birth-weight infants are surviving in unprecedented numbers: the consequences for learning may be subtle and widespread. In addition, there are environmental factors, such as lead poisoning, the effects of which have barely begun to be investigated.

So, the reason for having a learning disability may be a combination of intrinsic and extrinsic factors, factors not yet identified, or even the normal variation within the human organism. For those learning disabled who also happen to be hyperactive, medication can help slow down and maintain attention. But basically there is no fixing or curing, there is only compensating or living around the difficulty.

A recent cartoon showed a caveman perched before a fancy desk and the suited man behind it saying, "Your aptitude tests indicate that you'd make a good hunter or gatherer." The laughter would be hollow if we suddenly, desperately, needed the services of a hunter-gatherer. It should be a reminder that we start with the widest range of potential skills and behaviors in the young child, from which a very narrow range is selected for academic instruction and school success. Although we

have chosen these skills to be formally transmitted, we recognize that many others are necessary for success in the adult world of work, skills that are not generally learned in a school. In the best of worlds, this works fine: certain talents are developed in school, others grow in activities such as paper routes, sports, or hanging around with friends; the child grows, integrates these skills and talents, and blossoms while engaged in satisfying competent work. In the real world, we lose. Children often suffer more than a decade of daily failure before choosing and maintaining work. Even the special assistance now increasingly available to the learning disabled has its danger: that in overemphasis on the narrow range of skills, the variety and richness of human potential may be neglected. The individual grows with a sharply-defined image of his weaknesses. Later, very accomplished adults judge themselves inadequate as people because of school-related insufficiencies.

Implications for Work

A study comparing the performance of disabled and non-disabled adolescents in the classroom and the workplace showed a marked discrepancy in class but none at work, using teacher and employer ratings of the same behaviors. These young adults were normal in job competence, despite consistently low ratings in school. However, the same group ranked themselves inferior to others in social interaction, self-esteem and competence.² Successful work experience does not outweigh the image of personal inadequacy carried over from school.

Learning disabled people may in fact make special contributions to their jobs and the workplace. Their strengths often include high motivation and perseverance in the face of adversity. Coping skills may be well developed, including such useful talents as bluffing and covering up. The learning disabled often have greater in-depth understanding of their deficit skill areas, and can develop cues, aids and alternatives for others. Analyzing a subject or skill for the disabled to learn improves the learning efficiency of all others.

Every learning disabled person usually has a range of normally functioning abilities which can be matched with appropriate jobs. And the disability itself often makes for a fresh, unusual approach, a unique view of the world.

The disadvantages of learning disabilities at work are many. Employers generally value quick mastery of the task; inefficiency of learning is not tolerated in a person without a visible handicap. Even after task mastery, the person may make more frequent errors,

working extra time for corrections. Academic skill deficiencies interfere with taking messages, filling out order forms, reading directions. Those with perceptual handicaps find themselves missing oral instructions, confusing directions and unable to find their way to make deliveries. This also increases accident proneness. Many learning disabled have particular difficulty with sequences of tasks, or are particularly distracted by noise, speed and confusion.

The barriers to work are often subtle:

Upgrading: Many vocational schools and training programs have upgraded the reading and other academic requirements. The talented, but disabled, person now has less access to alternative skill training and job placement.

Inflexibility: Many jobs require little reading and writing. A person could use alternatives, could be teamed with someone for checking errors, could swap skills. The possibilities are many, but the opportunities to apply them are few. For example, Dian Ridenour, director of a selfhelp network of LD adults, has this experience applying for social work jobs: "Because I am so competent, my resume is pulled every time. But as soon as they find out I can't read or write, they don't give me the Job. When I offer them alternatives, they don't believe me."³ Many non-reading, or otherwise learning disabled adults go through their working lives with elaborate schemes for covering up and escaping detection. This deception eventually takes its toll in bitterness and emotional exhaustion.

Application requirements: Many application forms are unnecessarily complex for the positions being filled. Or there are written tests. You don't need to read to do the job, but you have to read to get it.

Prejudicial assumptions: Employers, like most other people, assume that higher-level skills presuppose lower-level ones. Even though we all know the image of the brilliant professor lacking common sense and many doctors, for example, are very inefficient readers, a **store manager who** reveals his dyslexia may find himself demoted to bagboy. The learning disabled may not look as competent as they go about learning tasks. Clients, employers, and/or college staff may make unconscious and unfair judgments about general ability, because of spelling errors.

Mismatching: If learning problems prevent higher educational achievement and access to the professions, learning disabled people find themselves competing for jobs where skill deficits are especially handicapping. Eileen Simpson, now a successful clinical psychologist, still has days when she can't spell or mistakenly walks past the door of her office. If she were working as a secretary, stockroom clerk or delivery person, she might be fired for her errors, or at the least fail to advance. The career problem of the learning disabled is not solved by lowered expectations, since the lower-level job may place even higher demands on perception, coordination, and accuracy.

Employers can adjust job requirements around individual strengths and weaknesses. They can scrutinize arbitrary regulations and eliminate those which don't affect productivity. They can allow extra training time. In the long term, employers benefit from the motivation and creativity of their employees.

Learning disabled adults must learn to use their strong points and work around their weak ones. Many have formed self-help groups to build self-esteem, advocate for rights and share information about coping skills and work opportunities.

Vocabulary of Learning Disabilities

As more people become sophisticated in their knowledge of the field of learning disabilities, the following terms come into general use. Many students now arrive at college with a history of identified learning problems; they may describe their difficulties using this kind of vocabulary.

Sensory: having to do with the reception of information by the sense organs. People are described as "sensorily intact", or as having normal visual acuity (keenness of vision) or auditory acuity (normal levels of hearing).

Perception: the receiving, integrating and interpreting of sensory information. It is the process of recognizing stimuli in meaningful fashion. Perceptual skills may be listed as:

visual discrimination: distinguishing likenesses and differences

visual sequencing: perceiving and retaining order

visual figure-ground: recognition of important figure from background

visual depth perception: recognition of distance of object in relation to self or objects in relation to each other.

auditory discrimination: distinguishing like or different sounds

auditory sequencing: recognizing order, including sound in words (phonemes), such as tap/pat

auditory focus: identifying and attending to meaningful stimulus, separated from other sounds or competing messages

tactile perception: includes discrimination of source and location of touch, and sensitivity to pressure or light touch

kinesthetic: perception of own body movement or position in space

Multisensory or Intersensory: use or interaction of more than one sensory modality for teaching or learning; for example, reading aloud and pointing to a list of words written on the board, or moving a tennis racket to a coach's verbal instructions

Sensori-motor development: movement and sensory information combine to give a sense of orientation in space, including
laterality: understanding of left and right
crossing the midline: carrying an action across the mid-point of the body, such as drawing a line on a blackboard
directionality: movement and relationship in space, from in/out, left/right, to compass orientation
scanning and mental mapping: observing features of the environment and forming a spatial image

Affective: having to do with emotion. Sometimes used with affective lability (shifting, unstable emotion), or disordered affective perception (difficulty "reading" the emotional tone of others, from body language, gesture, voice tone or expression, but not part of a general emotional or social problem)

Attention: the maintaining of orientation to a meaningful stimulus.

Includes focal attention, attention span, distractibility (sometimes greater in one modality, such as sound), and perseveration, which is a continuing response when no longer appropriate

Gross motor: refers to coordination of large muscles, as in running

Fine motor: refers to small movement coordination, such as assembling a model. People may have strength in one area, weakness in the other.

Dominance: the preferred use of one eye, ear, hand, or foot for activity, particularly language-related activity. Dominance develops over time and some people show poorly established dominance.

mixed dominance: preferences from both sides, such as left-handed, right-eyed

hemispheric dominance: the left hemisphere of the brain controls speech and language functioning for almost all right-handed people and most left-handed ones

plasticity: the quality of the young brain, by which functions lost by injury are redeveloped by other parts of the brain; this declines with age

Receptive Language: the understanding of language through hearing or reading. The interpretation of meaning from the spoken or written word

phonology: the meaningful sounds of the language; a phoneme difference is what separates bat/pat

morphology: the meaningful structure of words, such as endings, prefixes

syntax: the meaningful order of words in utterances; what distinguishes The dog bit the man./The man bit the dog.

Language Association: the presumed internal process of relating new verbal information to previous knowledge and experience

Expressive Language: the organized output of thought through speaking or writing, including phonology, morphology and syntax

Aphasia: the loss or severely disordered development of language, receptive or expressive, or both

Dyslexia: a specific, severe disability in learning to read efficiently, characterized by symbol confusion in a person of normal intelligence

Dyscalculia: a disability in learning the concepts and relationships of numbers

Dysgraphia: an inability to write smoothly and efficiently

Anomia or Dysnomia: severe difficulty retrieving familiar words from the memory

Hyperactivity or Hyperkinesis: abnormally high level of motor activity and restlessness. Some learning disabled people are hyperactive, but many hyperactives are not disabled

Minimal Brain Dysfunction or MBD: a term referring to a cluster of symptoms including clumsiness, restlessness, disordered attention, impulsivity, and assumed to relate to neurological immaturity. There has been much discussion about which term is the best descriptor: MBD is often contrasted with SLD (specific learning disabilities), or used conjointly (MBD/SLD), but Learning Disabilities seems to be the prevailing term. Efforts to devise precise nomenclature are somewhat misleading, since the state of neurological research does not allow for exact correlation of a term such as "visual sequential memory" with a physical function of the brain. Descriptions of underlying perceptual/learning processes are based on functional observations. They are useful for test design and teaching strategies, but are hardly final.

The Learning Disabled Student at College

There are many goals that bring LD students to a community college. Some very bright students with academic interests and excellent potential for achievement are discouraged from applying to a college with competitive admissions because of their specific learning disabilities. These students may absorb information intently and make exciting contributions to class discussions, then turn in barely legible written material.

Some students have talents and career interests that require further education. They may have excellent achievement under the conditions of their chosen work, yet have great difficulty learning the material in a classroom setting. These students may seem out of it until you touch on the area of interest. Other students may show good academic skills, but be disorganized and inefficient in their approach.

Community colleges are receiving an increasing number of older adult students who had unsuccessful school experiences and who realize that unrecognized learning disabilities may have prevented them from achieving to potential. These students are likely to be particularly anxious, aware of committing themselves to change and the risk of being judged.

For all students, there are many natural pressures against acknowledging a learning disability. Because it is a hidden handicap, one is inclined to keep quiet about it. Students are concerned about being perceived as asking for special favors. Many have experienced an unconscious prejudice from teacher: an assumption that learning disabilities represent a limit to learning, rather than an alternative style. Being told, "You did that very well, considering your difficulties," falls in the same category as "You make a good throw, for a girl," or "That is quite an

accomplishment, for a man of your age." Also, some students have been through so much special programming, so many hours of tutoring, that it seems unbearable to continue it into the "real" adult world of college. A modified program, or special help, would diminish the sense of personal accomplishment, of finally achieving on one's own.

All people use defenses against feeling rejected and inadequate. Among learning disabled students, one commonly encounters denial that a problem exists, a simple non-recognition of difficulty, even to oneself. Some students develop a pattern of blame, attributing all failure to the malice or incompetence of others. Sometimes people show elaborate habits of avoidance, trying to avoid any situation which will challenge a deficit skill. This is hard to maintain in life generally, and particularly difficult at a college. Some students use isolation, limiting their acknowledgement of difficulty to one specific skill and not dealing with symptoms in other areas.

Defenses are not "bad" or wrong, but are just ways of coping. Of course, we would like to see students who are clear in their goals, well-motivated, eager to acquire information and ready to benefit from the help of faculty and staff. But many students with obvious learning problems are not immediately ready to develop alternative methods and work cooperatively with teachers. The developmental tasks of late adolescence and early adulthood, including establishing independence and self-esteem, may interfere with the effective use of learning resources. Each person must come to terms in his own life with strengths and weaknesses, autonomy and the necessary areas of dependence on others.

The Demands of College

College can be thought of as a new environment, almost a new culture, with certain requirements for work and productivity. Looking at these demands on the student may help identify where learning disabled students are likely to have difficulty.

Orienting: All students experience some confusion with a new place, but some experience much more pervasive and persistent difficulty. Besides the obvious problem of left-right confusion, some students fail to observe landmarks and the relationship of buildings to each other. Even with effort, they may find it difficult to form a mental map of the campus, expending energy and anxiety in getting around.

Acquiring information: Information processing breaks down in many ways. Listening is difficult for some students, who may scramble and misperceive an utterance. They may be unable to accurately repeat a new vocabulary word, because of poor auditory analysis skills. However, some students rely almost exclusively on their strong listening skills, being more inefficient in reading. Students may have difficulty with the decoding aspect (being able to say the words on the page accurately) or with phrasing and tracking as they affect comprehension. Even after good remedial help, disabled readers are likely to be anxious and inefficient, checking back constantly and unable to build up comfortable speed. Copying is often thought of as a simple skill, but it involves complex skills of recognition, sequencing, tracking and short-term memory. Students who are likely to scramble directions, phone messages, or get lost are likely to copy inaccurately, perhaps mixing up formulas or important vocabulary words. Taking notes from a lecture requires doing at least two things simultaneously, listening and writing. Any breakdown

in either area is disruptive. Organizing is also required the ability to identify the important elements and supporting details, from a stream of language.

Expression of knowledge: Once the information is obtained, students are expected to display knowledge and understanding. Students who are capable of participating in oral discussions, may find it difficult to organize responses rapidly, or may be restrained by lack of self-confidence and uncertainty of pronunciation. This is still the primary way in which many learning disabled students reflect their knowledge, because of their extreme difficulties with writing. The handwriting itself may be disordered. Spelling requires good analysis and understanding of word parts, as well as visual sequential memory for symbols. LD students add or omit letters, and are inconsistent in errors, since they cannot identify the correct spelling. Many intelligent students have difficulty organizing the material; they miss part-whole relationships, and are likely to use a discursive, overly personalized, or primitive style that one would expect from a much younger or less capable person.

Retrieval: Students are expected to remember and express information on demand. Anxiety is an obvious part of testing, but some students are additionally insecure in their memory functioning under the most relaxed conditions. Long-term memory is affected by the intensity of the original learning: information which is familiar, is concentrated upon, to which many associations are made, which fits into a schema of previous learning, which is humorous or "interesting" is more likely to be remembered. But for some people, this breaks down very easily under stress.

Organization of time: Although some students have poor concepts of time and duration, the greater problem for LD students seems to be the

lack of experience. Students who have never successfully done homework or long-term assignments don't have a feeling for how long things should take. They may remediate the skills and be motivated, but show unrealistic expectations and time estimates. Learning to plan, concentrate and persevere are challenges for all beginning students, but LD students put more effort into the "simple" tasks and often find themselves mentally and emotionally exhausted.

Flexibility: College is a big change in itself and requires adjustment. The responsibility, the layout, the scheduling are all new. Teachers have different styles of course presentation and testing requirements. The work load varies dramatically through the semester. Some students have developed rather rigid habits and have difficulty adjusting to rapid change.

Being judged: Having one's work graded is a fact of student life, but it can be very stressful. Some LD students survived high school with an attitude of indifference to grades but college matters to them, so the grades carry more power and meaning. Older adult students have made the painful decision to do something about their learning difficulties and poor school achievement. However, there are few times in adult life that we willingly subject ourselves to being graded. That this may be in a deficit skill area, in an institution of authority, makes it a particular risk for the LD student, who probably has several horrifying memories of being publicly humiliated.

The demands of a college can be met by the highly motivated learning disabled student. Important skills can be learned as an adult, skills that were missed in school because they were not mastered during the allotted time. It is possible to start with first-grade phonics and master

reading and spelling skills, though never to the point of natural comfort.

It is possible to achieve in the very area of previous academic failure

because at college the value of independent, insightful thinking is re-

cognized. However, a lot of energy is required, a mobilization of resources.

The most successful students have drawn on a network of available assistance.

Teaching Strategies:

Teaching a class that includes learning disabled students can be a particularly rewarding experience. Such students often bring an intensity to the effort of learning and a special high enthusiasm when they have struggled through to a point of understanding and achievement. However, teaching faculty often have misgivings, which should be dealt with first:

"They don't belong here": People with learning disabilities are as likely to have college aspirations as anyone else, although discouraging school experiences may hold some back. LD has to do only with the processes of learning, not with the content or possible levels of achievement.

"Learning disabilities is just a euphemism for slow learners": The distinguishing feature of LD is the inconsistency and variability of performance, unlike uniformly lowered performance in retardation. In fact, some researchers and teachers are applying the principles of analyzing strengths and weaknesses to the field of retardation, in an effort to make more appropriate individual educational plans.

"Fix it and come back": Students should certainly make the effort to obtain remedial help and/or skill development. These interventions are useful and effective. However, disabilities are not remediated out of existence: they do not disappear, and there is a point of diminishing return.

"Now I've heard every excuse in the book": It would be possible for students to claim learning difficulties in an effort to get special arrangements, but it seems to be very rare. In fact, the opposite problem usually exists: students with severe needs do not make themselves known. Students generally find it difficult to deal in a straightforward and

assertive manner with faculty. They do not ask for special arrangements.

"It means a lot of extra work": It would certainly be unreasonable to ask faculty to make individual plans and adjustments for a number of students to the detriment of others. However, teaching strategies that are effective with the LD population make for more efficient learning for everybody. LD students should not be singled out for special treatment: that would convey that they couldn't be expected to achieve like other people. Any accommodations are intended to modify the learning process but are not intended to modify the course requirements or curriculum.

Student responsibility: Ultimately, students are responsible for their own choices of career goals, major area of study, making use of assistance, perhaps dropping out of school altogether. No one can make these choices for another. Also, LD students themselves are often the best inventors of alternate learning strategies. Students need support in an atmosphere where alternatives are thinkable, strengths are recognized, expectations are positive. An atmosphere in which excitement about learning is modeled and the effort to learn is cooperative.

Accommodations: These are ways in which procedures for gaining information and reflecting knowledge can be modified, so the LD student has an equal opportunity at the level of understanding.

Textbooks on tape: Students who are arranging to obtain recorded texts from Recordings for the Blind may request text information from instructors prior to bookstore orders. This is due to the lead time necessary for recording. Boston University is in the process of setting up a taped text library, which can be used by students and colleges in

the region. Students can also arrange for readers through the Handicapped Students Office at NECC. Listening to texts is much more tedious than efficient reading, but can be a major assistance to the LD student.

Notetakers or taping: Students may need assistance in locating a classmate who can take carbon notes. Some teachers make special arrangements to provide copies of their own lecture notes, or for the student to compare notes after class. Some students tape record all lectures and make notes from the recording. Instructors concerned about the use of tapes may request signed statement that they are only for personal use.

Alternate examination procedures: NECC does not have a formal procedure for proctoring exams separate from the class, but some colleges have a facility as part of special services. The most common arrangement is for untimed or extended time administration. In severe cases, exams may be recorded, answers may be dictated or recorded, the test may be read aloud to the student as the student writes or dictates the answers.

Presentation Strategies:

Many techniques can be used as part of the normal presentation of course material which may enhance the learning of those who have difficulties. It is not generally necessary to single out the learning disabled students. A class format which provides structure for the information, a variety of presentations and the expectancy of success for everyone will be a good learning environment for any student.

Syllabus: A carefully-written course syllabus can provide the LD student with valuable information about scheduled reading, work requirements, projects or presentations and test dates. Statements in the syllabus can repeat and reinforce policies on grading and alternative testing.

Cuing and Pre-organizing: Most people learn new information better when they can anticipate from a cue. These can be verbal, to draw attention to important items ("I will give 3 directions about the lab assignment") and prepare the listener to concentrate. Visual cues are helpful, such as key words or an outline written on the board, especially if the instructor draws attention to these while speaking. Lectures can be particularly effective if an outline is handed out in advance, with space for students to add notes and supporting details. This relieves much of the anxiety about getting the important points or trying to write everything and frees the student for more active listening and participation. Some instructors provide a study outline before exams to direct the review. Anything which is natural to one's teaching style and provides students with anticipatory information or organizing structure is particularly helpful to the learning disabled.

Vocabulary: The words of a subject are the true building blocks of learning, but it is the rare student who actively checks unfamiliar words and learns new meanings. Required word lists are the classic form of vocabulary development, but teachers can spot check understanding in class discussions. Keeping and consulting a dictionary in class is probably the most effective modeling. Many students will need some assistance at first in interpreting dictionary entries.

Some LD students have great difficulty using a dictionary because of spelling difficulties as well as lack of alphabetization skills and using abbreviations and symbols. A thesaurus is a good source for synonyms that the student can spell and may fulfill the meaning of the word wanted by the student. (American Heritage Thesaurus is

recommended because of the large print and adequate space between lines and words.)

Alternate presentation styles: An active lecturer speaking to passive students is not always the most effective way to promote learning, but tends to remain as a habit. Alternatives can be used that are consistent with one's teaching style, or used to vary the presentation during the semester. Students may be reluctant to talk at first, but directed discussion can check concept development and help to form personal associations for learning. Students may be asked for frequent feedback, in the form of class exercises, quizzes, direct questions, questionnaires. Instructors can thus obtain information about student learning and the effectiveness of one's teaching style. Student presentations demand more active learning and mastery of the material. Incidentally, they vary the style of classroom presentation. Teaming assigns students to small groups which are responsible for some aspect of the course, such as learning and presenting text material. This distribution of responsibility intensifies the learning, but reduces the quantity to be individually mastered. It also provides small group experience which is typically known in business and industry as the project group. Subjects in the human services lend themselves well to role-playing, which is particularly effective way to understand the feelings of others. Some instructors enjoy the use of audio-visuals, such as the overhead projector, film or videotape. Media can be used to stimulate discussion, present graphs and other visual material, or record lectures and student presentations. Something as simple as reading aloud can be effective in conveying the excitement of a piece of literature or can aid in helping students to understand directions for doing assignments.

Amplify the message: It's a practical bit of knowledge that dyslexic children read better if the print is larger, auditorily scrambled children hear more accurately if the message is slower. Anything which gives important information extra emphasis is a legitimate teaching tool. This might include underlining on the board or with gesture, a louder voice, a softer voice. Emphasis can come from fewer words, more widely spaced: a short phrase is easier to grasp and draws attention to itself. Large, clear print is a real advantage over handwriting, and color can be used for flagging critical points, as can marginal notations or symbols. Let imagination loose!

Organize the message: Besides outlining, organization techniques include the use of columns, graphs and diagrams to communicate ideas. Verbally presented concepts can often be made more memorable in this way, for example; the branching diagram and symbols of a family tree.

Personalize the message: The best machine operators, pilots, or computer operators often name their machines. Giving an inanimate object some personality seems to make it easier to learn and maintain. Mnemonic devices with funny or outrageous images work on the same principle of expanded associations. Using an extreme example, odd conjunctions, chants and jingles aid the memory. Learning can also be personalized through pointing out practical applications, drawing on one's own life experience or that of students.

Learning Hierarchy: Being aware of the hierarchy of learning helps to pinpoint the student's knowledge. Most classroom questions and tests ask for direct retrieval of information. But the student may

know the information without being able to retrieve it readily and this can be checked by giving a context clue or associated example. The student may be able to recognize the correct item from an array of choices. At the other end, beyond retrieval, students can be challenged to apply learning to new situations.

Study skills: Using any opportunity to teach study skills will be of benefit to students. Most good and poor students alike have fuzzy ideas about how to organize their efforts, and they waste a lot of time learning. Frequent tips from instructors could include scheduling and time management, how to read actively by forming questions and writing summaries, how to review and associate to previous learning, organizing thoughts for a paper using main idea and supporting details. All students, not just the learning disabled, could benefit by becoming more aware of "metacognition"-their own processes of learning.

Test writing: Understandably, most students have anxiety about tests, but the learning disabled are additionally worried that a test with illegible writing, inadequate directions, no samples or illustrations, and confusing language with multiple interpretations will throw up a barrier between what they know and what they can reveal on a test. Besides covering the material, a well-written test has clear print, a variety of response styles (essay, matching, short answer, etc.), really clear directions, and an indication of the points for each section.

Reducing tension: Some educational programs seem to pride themselves on being "tough", on creating and maintaining great tension and

weeding out any students without sufficient stamina. It is a persistent myth that students learn better under induced anxiety and it is particularly harmful to learning disabled. These adults have experienced tension and anxiety in learning at too young an age and at too high a level for it to be productive. The greater danger is emotional defeat, or perhaps bitter withdrawal. This is a great loss. An instructor creates the atmosphere for learning by conveying an expectancy that all students will do well, having respect for the uniqueness and variety of learning styles, demanding top effort, and showing enthusiasm for progress.

Learning Strategies

Learning disabilities: it's something that makes you feel dumb instead of smart, you don't outgrow it like baby fat, most people don't understand what you're going through, and it gives you a royal pain in the head. And maybe you've been through years of special education and tutoring and you still can't spell. (If you think you have serious learning problems that have never been identified, you may consider the evaluation services listed in the Resources section. It can help to identify what you're dealing with.)

In spite of previous miseries with schools, you've decided to come to college. Maybe a career goal requires further training, or a particular subject interests you, or you've decided on general self-improvement. Give yourself a pat on the back for courage and perseverance. Then look out for the two most common mistakes LD students make:

1. "I gotta do this on my own." It's true that no-one can do your learning for you, but even the astronauts work in teams these days. Successful people, of any learning style, build up a network of helpful associations. Instructors want students to learn successfully and are willing to extend themselves if asked. Anyone who thinks this is unfair, hasn't learned much about the adult world yet. Bury the past and tell yourself, "I deserve help, and people really enjoy helping me."

2. "It ain't my fault." This is true too, but so what? You were born with strengths and weaknesses in learning, and maybe your schooling was terrible, but the only person in control of today is you. There's always someone you can blame, some distraction, some unfair grading practice, but it's a colossal waste of energy. So give yourself a positive statement like, "I'm working hard and

doing very well," then make it come true.

Learning disabled students often feel at a disadvantage, because other students have more visible handicaps or learn the material more easily. However, many of the problems are not unique to LD students, but are part of getting used to college. All students find it hard to write papers, study for exams, concentrate on lectures, and stay awake while reading. College involves new demands, new ways of thinking. Students everywhere struggle to get in control of their lives and feel discouraged by setbacks. We have much more in common with each other than we have differences. So help may be found anywhere, but the following suggestions are specifically from other learning-disabled students.

Study your learning style: Instructors can make only limited accommodations to individual differences, but knowing more about your own idiosyncrasies of learning will improve your strategies for compensating. This is useful, also, in choosing jobs and career goals. Some students keep a strategies notebook and write down any observations about learning: do you learn better by listening or seeing, for example, or must you write or do something to fix it in your mind? Watch for workshops or articles on learning styles, and learn from them. How do you handle details vs. concepts, can you listen and take notes simultaneously, do you have memory problems? What distracts you easily?

It is hard to work out all the significant things about your own learning by yourself, and you may want to talk to an academic counselor, a learning disabilities person, or one of the adult LD groups. But no-one else has all the information about you. Being a learning detective, you can pinpoint areas of difficulty and get the necessary help.

Keep healthy: Friends are often the worst offenders here. They insist on getting you out to "have a good time and relax," but having fun takes energy just like working does. If you have learning disabilities, you need all the advantages you can get: sleep, good diet, regular hours, and a reduced schedule of other obligations. Just doing the so-called "simple" things may take more effort: things like finding your way around campus, using the alphabet to look up words, writing the assignments down, proofreading the paper. A person with weak processing skills is more vulnerable to break in routine, so make room for you first.

Use accommodations: Once you've discovered what works for you, you can arrange classroom accommodations. These include tape recording lectures to review later or use to check your notes. You may negotiate with a note-taker to take notes with carbon, in exchange for some service you can offer; some instructors will agree to check your notes for accuracy or provide you an opportunity to read their lecture notes. Extended time or orally administered exams can be provided. All such arrangements are privileged, not to be abused. After all, they don't make the work easy, just possible.

Consider remedial services: Almost all colleges have developmental skill centers, with support in writing, reading and study skills, math and algebra. Maybe you've had it up to your eyebrows with special instruction in basic skills, but don't just pass it by. Adulthood is a very good time to really get an understanding of the whole skill, from the basics to college-level application. Your mind is better able to grasp the reasons and the structure of a skill than when you were younger. And many colleges provide course credit. Tutoring can often be arranged, through a counselor, one of your instructors, or privately.

Organize, organize, organize: All good learners use techniques and tricks of organization to help themselves learn, store and retrieve information. Many LD students never acquired these strategies and need them even more. The first level is organizing space and time. Establish regular places and times for study, then stick with it: it gets easier after a while. Next, organize materials. Maybe you need a briefcase with pockets, a labeling system for recorded materials, notebooks with tab dividers, a couple of boxes with file cards in different colors. Having the necessary materials makes it easier to start, gives you an edge on any learning problems that pop up. Then, organize information. Any books on study skills would help you in this area. It could include reviewing or rewriting your notes every day, underlining or coding important facts. For each subject, there might be a card file of new vocabulary, or formulas, or significant people. Your memory is improved by learning more about each important thing, so ask yourself questions about each item: Why is this important to learn? How does it relate to what I already know? How will it be tested or applied?

It's usually easier to remember something through an example or a visual image. Find the technique that works for you and use it, and get ideas from your instructor and other students. It might be a silly rhyme to recall a list of things, a "real-life" example for a statistical formula, a visual image for an electronics formula. Check it out with a knowledgeable person; it doesn't help much to remember an inaccurate example.

Learn to relax, meditate and concentrate: Again, be on the lookout for workshops, books and articles. It is only natural to be tense and anxious when you have a serious learning difficulty, but tension works

against the learning skills you do have. For basic relaxation, get into a comfortable, sitting position. Start breathing slowly and deeply from the abdomen into the chest. Breathe in relaxation, breathe out tension. Think of each part of your body in turn, and feel the relaxation deepening with each breath. Tell yourself, "I am calm and relaxed."

Meditation or visualization uses the power of your mind's imagination for relaxing and setting a positive tone to your efforts. Studies with people who are ill, with athletes, with musicians, have shown that people have an untapped ability to improve physical and mental well-being, and this can even improve performance. First imagine yourself in a favorite place, relaxing. Notice the feeling, the sights and sounds, really experience the place. Then choose something that you want to improve in your studying and make a very positive image of it. Really see yourself writing the paper, speaking out in class, whatever. Feel how good it feels as you go on with more confidence, knowing that you have power and well-being, and that others like you just as you are.

People with poor eyesight or hearing often pay less attention to looking and listening, and you are likely to neglect whatever channel of learning is unrewarding to you. But these channels can be improved with concentration. If you have trouble finding your way around, pay extra attention to landmarks, talk to yourself about the route, turn around to look back now and then for return reference, try to relax. Maybe even take up orienteering. Before study, get psychologically set to concentrate: answer the questions, "Why am I doing this? and What good will it do me?". Imagine the pathways of your mind are completely filled with thoughts about the subject. Become aware of daydreams and distractions and notice what they are or at what point you lost track. You can even make a list of the distractions to get back to later, when you can really enjoy them or do something about them.

Learn active listening, active reading: Anticipating what a lecture will be about, then asking oneself questions or forming an opinion will help to focus attention on the subject. Focus on the speaker and if your mind wanders off, gently bring it back. Listen for clues to main ideas: some speakers say, "This is a main point," others use voice tone or write on the board. Before reading, psych yourself up to find out about this topic, then attack it with a method like SQ4R. This involves a survey of headings, summaries, topic sentences, followed by careful reading, generating questions about what the author is saying, then answering them. A recitation in your own words, and a review procedure complete the main points of the method, but it's best to get some help and supervision in applying it. Most LD students skip a lot of reading material because of slow speed and inefficiency, but you need a way to read in depth and get understanding.

Join a team: Knowing your subject is only part of being successful in the working world. Interacting productively with a variety of other people is important, too. Besides, it's fun. A group of like-minded, supportive people is an encouraging force through college. This could be a circle of friends, a sporting group, a club, or a study group formed specifically to coach each other (a study group is something most law students form). Stop and think how your team reflects on you: do the others share your serious intention to do well? College is a time of changing and strengthening values, and some relationships may be due for a change. As a learning-disabled student, you may not feel you have much to offer a study group or "academic" circle, but you do. You have a unique point of view, great persistence, and often a more in-depth knowledge of a field because of your struggles with it.

Learn goal-setting and time management: It's an old truism that you can always get what you truly want. Most of us get stuck at clarifying our true wishes and goals, but that's what gives our daily efforts structure and satisfaction. Again, watch for workshops and books. There are many activities to help you draw out your goals: writing out a list of lifetime, long range goals, ie: everything you'd like to do in your whole life. Then intermediate goals and activities as if you knew you had just six months to live. Studying and refining these lists can make your goals and their priorities clearer. When you make a list of things to do each day, your goals help you. For instance, if one long range goal is "finish school and do well", the intermediate goal might be "pass composition course" and you'd better plan today to "choose topic for research paper and write it down, with three references to start on."

Time management is not automatic for anyone, but LD students may have particular difficulty budgeting time for assignments, because you may not have had many successful, long-term assignments. Get in the habit of estimating the time needed for every thing you do: before you begin an assignment, write down the time you expect to be finished. It can help your efficiency and concentration, as well as give information about how long things really take. Long-term assignments need intermediate deadlines, or all the work piles up at the end.

Bury the past: There may have been miseries, failures and anxieties, but those are in the past. Now is the time to establish new, successful habits. But be a little compassionate on yourself. Messing up, blowing a test, indulging yourself instead of studying - these are all things that happen during the effort to change. It does not mean you have failed or are a bad person. Just bury the past again and start the next day with fresh energy and a reminder of all the things you've learned and accomplished.

RESOURCES

Adult Groups:

Sources for information, advocacy and support

1. Mass. Association of Learning Disabled Adults (Mass. ALDA)
c/o FCSN, Walker Building
120 Boylston Street
Boston, Mass. 02116
2. Association of Learning Disabled Adults
P.O. Box 9722
Friendship Station
Washington, D.C. 20016
3. Time Out to Enjoy, Inc.
113 Garfield Street
Oakpark, Illinois 60304
4. National Network of Learning Disabled Adults
c/o Linda Larch
2103 Oak Brook
Richardson, Texas 75081
5. Adult Division of the Association for Children with Learning
Disabilities (ACLD)
5225 Grace Street
Pittsburgh, Pennsylvania 15236

Pamphlets:

1. Learning Disability: Not Just A Problem Children Outgrow, publ. by The President's Committee on Employment of the Handicapped and available from MACLD, P.O. Box 28, West Newton, MA 02165
2. Plain Talk about Children with Learning Disabilities, publ. by NIMH and available from Alcohol, Drug Abuse, and Mental Health Administration 5600 Fishers Lane, Rockville, Maryland 20857
3. Taking the first step...to solving learning problems, publ. by and available from ACLD, 4156 Library Road, Pittsburgh PA 15234
4. Steps to Independence for People with Learning Disabilities, by Dale Brown, available from Closer Look, P.O. Box 1492, Washington D.C. 20013

Books and Articles:

1. Johnson, Doris J. and Myklebust, Helmer R., Learning Disabilities: Educational Principles and Practices, Grune & Stratton, N.Y. 1967.
2. Orton, Samues T., Reading, Writing and Speech Problems in Children, W.W. Norton Co., Inc., 1937.
3. Wiig, Elisabeth and Semel, Eleanor, Language Disabilities in Children and Adolescents, Charles Merrill Publ. Co., Ohio, 1976.
5. Lerner, Janet W., Children with Learning Disabilities, Houghton Mifflin Cl. Boston 1976.
6. Cox, S., "The Learning-Disabled Adult," Academic Therapy, Vol. 13, No. 1 September, 1977.

7. Silberberg, N. E. and Silberberg, M.C., "And the Adult Who Reads Poorly?," Journal of Learning Disabilities, 11:1, January, 1978.
8. Lenkowsky, L.K., and Saposnek, D.T., "Family Consequences of Parental Dyslexia," J. of Learning Disabilities, 11:1, January, 1978.

Evaluations:

1. North Shore Children's Hospital in Salem, has a Medical Educational Evaluation Center, at 57 Highland Avenue. Phone: 745-2100, x227.
2. Massachusetts General Hospital, has a Language Disorders evaluation unit, either for Speech & Language or Reading, Boston. Phone: 726-2763.
3. The Reading Institute, on Newbury Street, Boston, does extended reading inventory. Phone: 266-0322.
4. The Learning Disabilities Foundation, at the Landmark School in Pride's Crossing, does a complete psycho-educational evaluation. Phone: 927-4440, x63.
5. The Reading Lab, at Harvard University, provides reading evaluation by students under supervision.
6. Dr. Kathy Clem, in Cambridge, provides psycho-educational evaluation and consulting. Phone: 492-2229.
7. Greater Lawrence or Greater Haverhill Mental Health Centers will do The Wechsler Adult Intelligence Scale Testing. Phone: Greater Lawrence: 617-683-3128, Greater Haverhill: Northern Essex Health Resource Center: 617-462-4644.
8. Adult Learning Center, Essex Street, Lawrence will evaluate specific academic areas and provide individualized programs. This is part of the Lawrence Public School System. Phone: 617-685-0627.

Learning Strategies: . Some Readings

1. I'm OK, You're OK, by Eric Berne
2. How to Get Control of your Time and your Life, by Alan Lakein
(This is used by IBM)
3. Creative Visualization, by Shakti Gawain
4. Mind over Math, by Sheila Tobais

ERIC Clearinghouse for Junior Colleges
8118 Math-Sciences Building
University of California
Los Angeles, California 90024

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